

Assessing and teaching female intermittent self-catheterization

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Female intermittent self-catheterisation

Intermittent self-catheterisation (ISC) is the recommended method for bladder emptying in women with bladder dysfunction (National Clinical Guideline Centre UK, 2012, National Institute for Health and Care Excellence (NICE) , 2013, Vahr et al, 2013 and Royal College of Nursing Continence Forum Committee, 2012). ISC is the insertion and removal of a catheter to drain the bladder and is considered a safe and effective way of preserving renal function. ISC is a clean technique when used by the patient in their own home. Although the individual's wishes should always be taken into consideration, for many women ISC promotes independence, self-management, preserves intimacy and sexuality and can improve their quality of life (Nazarko, 2012 and Vahr et al, 2013).

Bladder function

The function of the bladder is to store and expel urine. This requires co-ordination of the smooth and striated muscles in the bladder, bladder neck, urethra and urethral sphincter. Co-ordination is facilitated by a complex neural control system. Voluntary control of voiding requires interaction between autonomic and somatic efferent pathways. As urine is produced and fills the bladder, the sympathetic nerves enable the bladder (detrusor) muscle to relax and stretches to accommodate the fluid, at the same time the internal sphincter contracts. When the bladder is filled to a certain level, an urge to void is felt, the brain triggers the parasympathetic nervous system, the detrusor contracts and the sphincter is relaxed enabling voiding (Abrams et al, 2010 and Mahfouz et al, 2012).

Why is ISC required?

An average adult bladder can hold between 350 and 500mls (Abrams et al, 2010 and Mahfouz et al, 2012). Normally after the bladder empties a small amount of urine remains (around 75mls) called a post-void residual (PVR) (Newman and Wilson, 2011). If a person cannot void or empty the bladder completely the PVR increases, which can contribute to urinary tract infections (UTI's), incontinence and permanent damage to the bladder and kidneys.

Acute urinary retention is a sudden inability to pass urine, which can cause severe supra-pubic pain. Acute retention is seen more commonly in women post-operatively (especially following spinal or

epidural anaesthesia) and following childbirth (Basson., van der Walt and Heyns, 2012). Other causes include:

- Urethral strictures
- Urinary tract infections
- Constipation
- Anticholinergic medication
- Neurological disorders
- Bladder stones
- Uterine fibroids
- Foreign bodies (i.e. ring pessaries)
- Pelvic organ prolapse
- Anti-incontinence surgery
- Pelvic masses

(Basson., van der Walt and Heyns, 2012)

Chronic urinary retention develops slowly and may present with urinary frequency, nocturia and dribbling or overflow incontinence, and is typically painless (Basson., van der Walt and Heyns, 2012). Chronic urinary retention is commonly associated with neurological conditions such as multiple sclerosis, spinal injuries and following a stroke and is due to detrusor under-activity, or detrusor dyssynergia (Seth., Haslam and Panicker, 2014 and Fowler et al, 2009). Fowler's syndrome is the most common cause of urinary retention in young women (Osman and Chapple, 2013). Fowler's syndrome is caused by the sphincters inability to relax and allow urine to be passed normally.

Whether ISC is required short term or long term is due to the reason for incomplete emptying and women who develop urinary retention should be assessed to determine the cause and whether this can be resolved, before long term ISC is considered.

Advantages of ISC

Intermittent self-catheterisation offers a number of advantages for women including:

- Improved self-care and independence
- Potential complications of ISC
- Reduced risk of common complications associated with indwelling catheterisation
- Reduced need for equipment
- Potential reduction of lower urinary tract symptoms such as frequency, urgency

Complications and contra-indications of ISC

Contra-indications for ISC are few, with patients who have a high intravesical (bladder/detrusor) pressure being an absolute contra-indication, due to potential renal reflux (Vahr et al, 2013). Urethral bleeding is common when women are learning the technique, persistent bleeding can indicate a UTI or urethral trauma (Igawa., Wyndaele and Nishizwa, 2008) Urethral trauma can result from using unlubricated catheters or the use of force when catheterising which leads to urethral spasm (Wyndaele and Maes, 1990, Perrouin-Verbe et al, 1995, Vapnek., Maynard and Kim, 2003 and Elvy and Colville, 2009). Trauma to the urethra can compromise the urethral mucosa barrier, increasing the risk of infection (Elvy and Colville, 2009). The use of hydrophilic coated catheters can reduce the risk of haematuria, and lubrication (either incorporated into the catheter or externally applied) can reduce urethral trauma (Stensballe et al, 2005 and Vapnek., Maynard and Kim, 2003).

Frequency of ISC

Where a women is unable to empty their bladder at all, a regime of 4-6 times a day is required. Where a women is able to void the regime is determined by the PVR, often 1-3 times a day. The table below illustrates the frequency of ISC required depending on PVR (Naish, 2003).

Table 1 – Frequency of intermittent catheterisation (Naish, 2003)

Residual bladder volumes	Frequency
Unable to void	On average 4-5, possibly 6 times a day (depending on incontinence symptoms)
Over 500mls	More than three times daily
Between 300-500mls	2-3 times daily
Between 150-300mls	1-2 times daily
Less than 150mls	Daily
Less than 100mls on three consecutive occasions	Stop and re-assess residual urine levels – may need to undertake ISC as little as once a week.

Teaching ISC

Before teaching a women ISC technique is important to educate them about their anatomy and to locate the opening of the urethra, a mirror can be useful to do this. An assessment of dexterity, in order to hold and manipulate the catheter should be undertaken as this may affect the individual's ability to undertake the procedure independently or the choice of catheter and accessory equipment required. ISC can be undertaken in a variety of positions including sitting on the toilet or standing with a leg on the toilet, or sitting in a wheelchair. The position used will depend on the women's balance and mobility (in particular to be able to position themselves correctly and to hold this position). Motivation and commitment are also important as ISC is usually for life.

Women should be given a choice of ISC catheters to try. From a patients point of view the most important aspects when choosing a catheter are, comfort, discretion, ease of use and maintenance of independence wherever possible. ISC catheters can be coated (hydrophilic and ready to use) or non-coated. Pre-lubricated catheters can come with a gel coating or are "self-lubricating" which require soaking in water to be smooth enough to insert. Most catheters used now are single use. Catheters come in a range of sizes from 8-14ch and the smallest should be chosen depending on dexterity and patient comfort.

Privacy and dignity are important to women and manufacturers have gone to great lengths to produce compact catheters and packaging that resembles cosmetic products such as lipsticks. There small and discreet packaging also makes them useful for storage and traveling, especially abroad as a box of 30 can easily be carried in hand luggage. One such catheter is the Curan Lady®. The Curan Lady® catheter is an ISC catheter, which comes pre-lubricated. A gel compartment provides a smooth mess free coating on the catheter as it is removed from the packaging, which along with the polished eyes make insertion and removal irritation free. It has an easy grip and twist lid which can be opened even with limited dexterity. Another advantage is that due to the universal colour coded connector it can be connected to a urine bag. Connecting the catheter to a urine bag can be useful if access to a toilet is difficult as it allows for the ISC to be undertaken on a bed or in a wheelchair without fear of spillage.

ISC is the preferred method for bladder emptying in women with chronic urinary retention. Healthcare professionals should be aware of current guidelines and evidence based practice to educate women about the risk of infection and how to avoid symptomatic UTI's when starting to learn the technique. Healthcare professionals should offer ISC as an option to women in order to preserve bladder function and promote self-care, independence and dignity.

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